INDEX

PETROLEUM REFINER
1944 . . . Volume 23

Development, Technology, Processing and Plant Operation for Petroleum Refining and Natural Gasoline Manufacture

Page

Acetylene
Chemistry of Catalytic Hydropolymerization of Acetylene....Aug. 317
L. I. Antsus and A. D. Petrov. Translated by J. G. Tolpin

Accident Prevention
How to Organize and Conduct a Refinery Fire School.....Sept. 356
J. C. Watkins
Shell's Wood River Refinery Hangs Up New Safety Record..Sept. 130
J. F. Goldsberry
Safety With Hydrofluoric Acid Alkylation .....Dec. 469
A. W. Trusty

Additives
Chemistry in Petroleum .....Aug. 307
J. L. Franklin
Detergency or Dispersancy in Heavy Duty Engine Oils.....Dec. 504
Carl W. Georgi

Adsorbents
Pressure Drop for Flow Through Beds of Granular Adsorbents.July 247
H. V. Allen, Jr.

Alcohol
Spirit of the Times.....Jan. 19

Alkylation
Aviation Gasoline Plant Construction Will Be Completed in 1944 .....Jan. 1
Liquid-Phase Isomerization .....Feb. 61
Problems Confronting the Smaller Refineries.....July 241
R. G. Atkinson
Alkylation-Unit Pumping .....Aug. 283
Irving Taylor
Chemistry in Petroleum.....Aug. 307
J. L. Franklin
Texaco Adds 100-Octane Capacity at Los Angeles Works.....Oct. 397
Safety With Hydrofluoric Acid Alkylation.....Dec. 469
A. W. Trusty

Analytical
The Meaning of Freedom.....June 134
Dr. Willard H. Dow
Co-operative Movement Hits Petroleum Industry.....July 154
Time Saving Computing Instruments for Spectroscopic Analysis .....Sept. 343
T. D. Morgan and F. W. Crawford
The Growth Factor in Small Business.....Nov. 459
Earl P. Stevenson
The Future of Industrial Research as Seen by a Chemist...Nov. 137
Thomas Midgley, Jr.

Aviation Gasoline
Aviation Gasoline Plant Construction Will Be Completed in 1944 .....Jan. 1
The Genesis of a Giant.....Jan. 9
Robert P. Russell
Liquid-Phase Isomerization .....Feb. 61
An Informal Long-Range Forecast of Motor-Gasoline Developments .....Feb. 122
D. P. Barnard and R. F. Marschner
War Requirements Responsible for Refining Records.....March 130
Pan American Completes Aviation Gasoline Facilities....March 148
How Will the New Processes Affect the Postwar Light-Ends Situation? .....May 165
D. P. Barnard and J. H. Forrester
Economics of Natural-Gas Cycling Plants.....May 124
J. M. Flaitz
Problems Confronting the Smaller Refineries.....July 241
R. G. Atkinson
Chemicals From Petroleum.....July 259
H. D. Wilde
Chemistry in Petroleum.....Aug. 307
L. J. Franklin
Conversion of Thermal Cracking to the Cycloversion Process Oct. 363
A. E. Buell and P. M. Waddill
The Relation of Aviation-Fuel Quality to Engine Performance Oct. 383
W. J. Sweeney
Texaco Adds 100-Octane Capacity at Los Angeles Works...Oct. 397
Aircraft-Engine-Test Stand Completed at Bayway.....Oct. 136
Commercial Isomerization of Light Paraffins.....Nov. 423
B. L. Evering, N. Fragen and G. S. Weems
Humble Celebrates Delivery of Billion Gallons of Aviation Gasoline at Baytown .....Dec. 138

Boiler Feed
Economics of Combustion .....Jan. 23
Edwin L. Dennis
Boiler Feed Water Chemistry.....Aug. 311

Page

Buna Rubber
Styrene, Buna Rubber and Polystyrene.....March 87
W. C. Goggin

Burners—Oil and Gas
Economics of Combustion .....Jan. 23
Edwin L. Dennis

Butadiene
Port Neches Butadiene Plant Now on Stream.....March 83
Styrene, Buna Rubber and Polystyrene .....March 87
W. C. Goggin
Rubber Program Reaches Controversy and Confusion Stage March 122
War Requirements Responsible for Refining Records.....March 130
West Coast Synthetic Rubber Industry Unveiled.....May 192
E Pluribus Unum .....June 226
Chemicals From Petroleum .....July 259
H. D. Wilde
Chemistry of Catalytic Hydropolymerization of Acetylene....Aug. 317
L. I. Antsus and A. D. Petrov. Translated by J. G. Tolpin
Butane Dehydrogenation by the Houdry Process.....Nov. 409
R. C. Lassiat and F. D. Parker

Butane
Pressure Distillate Stabilizer and Butane Recovery Unit Come Out of Junk Heap.....Jan. 37
Progress of the Liquefied Petroleum Gas Industry in 1943..Jan. 124
G. G. Oberfell
Analysis of Butane-Isobutane Mixture.....Feb. 67
Alfred W. Francis
Improvised Tower Recovers Butane.....Feb. 55
Pumping Light Hydrocarbons.....April 117
Reuben G. Lovell
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 3.....April 139
R. L. Huntington
How Will the New Processes Affect the Postwar Light-Ends Situation? .....May 165
D. P. Barnard and J. H. Forrester
Combustible Gases as Substitute Motor Fuels.....June 235
Gustav Egloff and Mary Alexander
Butane Dehydrogenation by the Houdry Process.....Nov. 409
R. C. Lassiat and F. D. Parker

Butylene
How Will the New Processes Affect the Postwar Light-Ends Situation? .....May 165
D. P. Barnard and J. H. Forrester
Chemicals From Petroleum .....July 259
H. D. Wilde

Carbon Black
Carbon Black—Part 1 .....March 93
J. F. Gallie
Carbon Black—Part 2 .....April 149
J. F. Gallie
Science in Natural Gas.....Dec. 472
James E. Pew and Frank H. Dotterweich

Carbon Monoxide
Foreign Processes for the Conversion of Methane to Hydrogen and Carbon Monoxide .....Jan. 35
Heinz Heinemann

Catalysis
Aviation Gasoline Plant Construction Will Be Completed in 1944 .....Jan. 1
Synthesis of Gasoline From Carbon Monoxide and Hydrogen at Atmospheric Pressure .....Feb. 70
Franz Fischer
Maximum Hydrocarbon Utilizaton With Natural Gas as a Chemical Raw Material.....April 130
J. E. Pew and Frank H. Dotterweich
Operation of Synthetic Toluene Plant Made Public.....April 128
The Synthesis of Lubricants From the Fischer-Tropsch Process—Part 1 .....July 260
F. Fischer and H. Koch
What Takes Place in Polymerization.....July 253
Paul H. Faust
Problems Confronting the Smaller Refineries.....July 241
R. G. Atkinson
Alkylation-Unit Pumping .....Aug. 283
Irving Taylor
Chemistry of Catalytic Hydropolymerization of Acetylene..Aug. 317
L. I. Antsus and A. D. Petrov. Translated by J. G. Tolpin
Conversion of Thermal Cracking to the Cycloversion Process Oct. 363
A. E. Buell and P. M. Waddill
Butane Dehydrogenation by the Houdry Process.....Nov. 409
R. C. Lassiat and F. D. Parker

Page

Fischer-Tropsch Synthesis and the Gas Industry....Nov. 415
V. I. Komarewsky and C. H. Riesz
Safety with Hydrofluoric Acid Alkylation....Dec. 469
A. W. Trusty

Catalytic Cracking

Aviation Gasoline Plant Construction Will Be Completed in 1944....Jan. 1
The Genesis of a Giant....Jan. 9
Robert P. Russell
Study of the Effect of Catalytic Cracking on the Postwar Supply of Motor Gasolines, Distillates and Residual Fuels....March 111
Pan American Completes Aviation Gasoline Facilities....March 148
How Will the New Processes Affect the Postwar Light-Ends Situation?....May 165
D. P. Barnard and J. H. Forrester
Conversion of Thermal Cracking to the Cycloversion Process Oct. 363
A. E. Buell and P. M. Waddill
Texaco Adds 100-Octane Capacity at Los Angeles Works....Oct. 397
Butane Dehydrogenation by the Houdry Process....Nov. 409
R. C. Lassiat and F. D. Parker

Cetane Number

Influence of Ozone on Diesel Engine Performance....June 204
Walter J. Armstrong and Clark E. Thorp
Ignition Accelerators for Compression-Ignition Engine Fuels..July 272
J. S. Bogen and G. C. Wilson

Charts

Construction of Log-Log Charts....Aug. 296
Emory N. Kemler
How to Determine the Amount of Concrete Needed....Oct. 368
E. N. Kemler

Chemical Processing

Spirit of the Times....Jan. 19
Maximum Hydrocarbon Utilization With Natural Gas as a Chemical Raw Material....April 130
J. E. Pew and Frank H. Dotterweich

Chemical Treating

Unisol Treatment Effects Large Savings for Big West Oil Company....June 218
F. C. Moriarty

Combustion

Economics of Combustion....Jan. 23
Edwin L. Dennis

Compression

Centrifugal Compression of Hydrocarbon Gases....May 181
E. O. Bennett
The Combustion-Gas Turbine....May 171
F. K. Fischer and C. A. Meyer

Compressors

Centrifugal Compression of Hydrocarbon Gases....May 181
E. O. Bennett
Compressed Air Institute Urges More Complete Use of Compressor Auxiliaries....Jan. 32
Maintaining Wartime Compressors at Peak Operating Capacity....Feb. 78
Bruno Thiel

Condensation

Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 1....Feb. 57
R. L. Huntington
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 2....March 107
R. L. Huntington
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 3....April 139
R. L. Huntington
Application of Unit Operation to Fractionation and Other Vaporization Processes—Part 4....May 188
R. L. Huntington
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 5....June 223
R. L. Huntington
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 6....July 269
R. L. Huntington
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 7....Aug. 301
R. L. Huntington
Process Design Procedure for Multicomponent Fractionators Sept. 321
C. G. Kirkbride
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 8....Sept. 351
R. L. Huntington
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 9....Oct. 400
R. L. Huntington
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 10....Nov. 451
R. L. Huntington
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 11....Dec. 499
R. L. Huntington

Construction

Aviation Gasoline Plant Construction Will Be Completed in 1944....Jan. 1
The Genesis of a Giant....Jan. 9
Robert P. Russell
Improvised Tower Recovers Butane....Feb. 55
Design of Foundations for Elevated Towers....Feb. 46
Samuel Garnett
Gas Transmission Practice....Sept. 359
Loring E. Heckman
Engineering and Construction of the Santa Maria Valley Absorption Plant....Sept. 347
D. E. McFaddin

Page

How to Determine the Amount of Concrete Needed....Oct. 368
E. N. Kemler

Cooling

Internal-Combustion Engine Cooling Improved Through Wind Tunnel....May 180

Cooling Water

Cooling-Water Systems and Their Chemical Treatment....Oct. 376
William A. Tanzola

Corrosion

Application of Nickel-Containing Corrosion-Resistant Alloys in the Petroleum Industry....May 186
B. B. Morton
Processing of West Texas Sour Crudes....Oct. 388
L. R. Gray

Cracking, Gas

Foreign Processes for the Conversion of Methane to Hyrdogen and Carbon Monoxide....Jan. 35
Heinz Heinemann

Cracking Plant

Processing of West Texas Sour Crude....Oct. 388
L. R. Gray

Crude Oil Analysis

Processing of West Texas Sour Crudes....Oct. 388
L. R. Gray

Cycling Plant Operation

Economics of Natural-Gas Cycling Plants....May 124
J. M. Flaitz

Dehydration

High-Pressure Dehydration Unit Conforms to Refinery Piping Code....Nov. 430
Harold F. Dawe and Henry N. Wade

Dehydrogenation

Butane Dehydrogenation by the Houdry Process....Nov. 409
R. C. Lassiat and F. D. Parker

Desalting

Processing of West Texas Sour Crudes....Oct. 388
L. R. Gray

Design

Design of Foundations for Elevated Towers....Feb. 46
Samuel Garnett
Maintenance of Electric Equipment Begins With Design..Aug. 292
Rayburn M. Hamilton
Process Design Procedure for Multicomponent Fractionators.Sept. 321
C. G. Kirkbride
Engineering and Construction of the Santa Mara Valley Absorption Plant....Sept. 347
D. E. McFaddin

Dewaxing

Oil Dewaxed and Wax Deoiled in Simultaneous Operation....June 230
Emil E. Ebner and F. T. Mertens

Diesel Fuel

Influence of Ozone on Diesel Engine Performance....June 204
Walter J. Armstrong and Clark E. Thorp
Ignition Accelerators for Compression-Ignition Engine Fuels..July 272
J. S. Bogen and G. C. Wilson
Motor Vehicle Power Plants and Transmission Line Units...Aug. 305
Robert Cass

Economics

PIWC Stresses Free Enterprise in Worldwide Oil Development....Jan. 132
Report on Lend-Lease Shows United States Biggest Oil User in War....Jan. 139
Aviation Gasoline Plant Construction Will Be Completed in 1944....Jan. 1
The Genesis of a Giant....Jan. 9
Robert P. Russell
Progress of the Liquefied Petroleum Gas Industry in 1943..Jan. 124
G. G. Oberfell
An Informal Long-Range Forecast of Motor-Gasoline Developments....Feb. 122
D. P. Barnard and R. F. Marschner
War Needs Spur Refineries on to All-Time High in 1943....Feb. 135
Estimated Consumption of Petroleum Products in the United States After the War....March 105
Study of the Effect of Catalytic Cracking on the Post-War Supply of Motor Gasolines, Distillates and Residual Fuels....March 111
Competitive Forces to Govern Petroleum or Alcohol Use in Synthetic Rubber Production....March 139
Economic Factors Affecting the Utilization of Natural Gas in the Southwest—Part 1....April 126
Clinton C. Randall and R. L. Huntington
How Will the New Processes Affect the Post-War Light-Ends Situation?....May 165
D. P. Barnard and J. H. Forrester
Natural Gas Will Supplement Crude Oil Reserves....May 145
Samuel F. Peterson
Status of the Natural Gasoline Industry....May 132
J. E. Pew
Economics of Natural-Gas Cycling Plants....May 124
J. M. Flaitz
Economic Factors Involved in Moving Natural Gas From Southwest—Part 2....May 122
C. L. Prokop and R. L. Huntington
Future Gas Supply Twice Known Reserves....June 130
Lyon F. Terry
Co-operative Movement Hits Petroleum Industry....July 154
Refinery Operations Near Capacity in Meeting Demand....Aug. 130
L. J. Logan

Page

Invention and the Oil Industry....Oct. 144
Gustav Egloff
Possibilities of Gasoline-Engine Development....Oct. 404
Forest S. Baster
Leveling of Demand Relieves Strain in Supplying Oil....Nov. 148
L. J. Logan

Electrical

Use of the Mass Spectrometer in the Routine Analysis of Refinery Gas Samples....April 123
J. G. Schaafsma
Refinery Operation Demands Effective Maintenance of Motor Starters....April 143
M. A. Hyde and L. E. Markle
Maintenance of Electric Equipment Begins With Design..Aug. 292
Rayburn M. Hamilton
Time-Saving Computing Instruments for Spectroscopic Analysis....Sept. 343
T. D. Morgan and F. W. Crawford
The Automatic Electric Timer in Plant Operation....Dec. 461
J. J. Loustaunau

Electrical Installations

What Constitutes a Hazardous Area....July 244
G. G. Griffin

Electronics

The Electron Tube—Genie, Gremlin or Jeep?....Jan. 14
W. D. Cockrell

Engine Cooling

Controlled Water Jacket Cooling Reduces Maintenance Costs June 197
B. C. Thiel

Ethane

Combustible Gases as Substitute Motor Fuels....June 235
Gustav Egloff and Mary Alexander
Butane Dehydrogenation by the Houdry Process....Nov. 409
R. C. Lassiat and F. D. Parker

Fabrication

Design of Foundations for Elevated Towers....Feb. 46
Samuel Garnett
Improvised Tower Recovers Butane....Feb. 55
E Pluribus Unum....June 226
Process Design Procedure for Multicomponent Fractionators Sept. 321
C. G. Kirkbride
Engineering and Construction of the Santa Maria Valley Absorption Plant....Sept. 347
D. E. McFaddin
Adapting Old Equipment to New Uses....Nov. 455
Donald E. Evans and Walter B. Meyer

Filtration

Pressure Drop for Flow Through Beds of Granular Adsorbents.July 247
H. V. Allen, Jr.

Fire Fighting

How to Train Plant Personnel in Fire Prevention and Fire Fighting....May 159
A. W. Trusty
How to Organize and Conduct a Refinery Fire School....Sept. 356
J. C. Watkins
How Foam Conquers Fire....Oct. 395
F. S. Mabbatt
How Carbon Dioxide Conquers Fire....Nov. 447
H. V. Williamson

Fischer-Tropsch Process

Synthesis of Gasoline From Carbon Monoxide and Hydrogen at Atmospheric Pressure....Feb. 70
Franz Fischer
The Synthesis of Lubricants From the Fischer-Tropsch Process—Part 1....July 260
F. Fischer and H. Koch
Recent Advances in Manufacture of Synthetic Lubricants From Kogasin....Aug. 312
F. Fischer, H. Koch, and K. Wiedeking
Fischer-Tropsch Synthesis and the Gas Industry....Nov. 415
V. I. Komarewsky and C. H. Riesz

Fluid Flow

Pressure Drop for Flow Through Beds of Granular Adsorbents.July 247
H. V. Allen, Jr.

Foreign

Report on Lend-Lease Shows United States Biggest Oil User In War....Jan. 139
Bombs Fall on Ploesti....March 113

Foundations

Design of Foundations for Elevated Towers....Feb. 46
Samuel Garnett
The Design of Ring Girders for Horizontal Tanks....June 207
A. C. Barton
How to Determine the Amount of Concrete Needed....Oct. 368
E. N. Kemler

Fractionation

Pressure Distillate Stabilizer and Butane Recovery Unit Come Out of Junk Heap....Jan. 37
Improvised Tower Recovers Butane....Feb. 55
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 1....Feb. 57
R. L. Huntington
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 2....March 107
R. L. Huntington
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 3....April 139
R. L. Huntington
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 4....May 188
R. L. Huntington

Page

Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 5....June 223
R. L. Huntington
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 6....July 269
R. L. Huntington
An Old Tower Goes to a New Job....Aug. 300
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 7....Aug. 301
R. L. Huntington
Process Design Procedure for Multicomponent Fractionators.Sept. 321
C. G. Kirkbride
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 8....Sept. 351
R. L. Huntington
Texaco Adds 100-Octane Capacity at Los Angeles Works....Oct. 397
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 9....Oct. 400
R. L. Huntington
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 10....Nov. 451
R. L. Huntington
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 11....Dec. 499
R. L. Huntington

Fuel Testing

Aircraft-Engine-Test Stand Completed at Bayway....Oct. 136
The Relation of Aviation-Fuel Quality to Engine Performance Oct. 383
W. J. Sweeney

Furnace Black

Carbon Black—Part 1....March 93
J. F. Gallie
Carbon Black—Part 2....April 149
J. F. Gallie

Furnaces

Economics of Combustion....Jan. 23
Edwin L. Dennis

Gas Turbine

The Combustion-Gas Turbine....May 171
F. K. Fischer and C. A. Meyer
Centrifugal Compression of Hydrocarbon Gases....May 181
E. O. Bennett

Gas Measurement

An Improved Meter for the Measurement of Gas Flow Rates....March 115
W. G. Appleby and W. H. Avery

Hazards

What Constitutes a Hazardous Area....July 244
G. G. Griffin
Safety With Hydrofluoric Acid Alkylation....Dec. 469
A. W. Trusty

Hydraulics

Pressure Drop for Flow Through Beds of Granular Adsorbents.July 247
H. V. Allen, Jr.
Alkylation-Unit Pumping....Aug. 283
Irving Taylor

Hydrocarbon Specifications

Solubility of Water in Liquid Hydrocarbons....May 170

Hydrogen

Foreign Processes for the Conversion of Methane to Hydrogen and Carbon Monoxide....Jan. 35
Heinz Heinemann

Hydrogenation

Synthesis of Gasoline From Carbon Monoxide and Hydrogen at Atmospheric Pressure....Feb. 70
Franz Fischer

Inhibitors

Thiophenol in Cracked Gasoline....Feb. 41
G. S. Windle

Instrumentation

Time-Saving Computing Instruments for Spectroscopic Analysis....Sept. 343
T. D. Morgan and F. W. Crawford
Characteristics of the Differential Type Flow Meter and Conditions Affecting Its Operation—Part 1....Oct. 370
L. K. Spink
Characteristics of the Differential Type Flow Meter and Conditions Affecting Its Operation—Part 2....Nov. 433
L. K. Spink
Characteristics of the Differential Type Flow Meter and Conditions Affecting Its Operation—Part 3....Dec. 488
L. K. Spink
The Automatic Electric Timer in Refinery Processing....Dec. 461
J. J. Loustaunau

Internal Combustion Engine

Internal-Combustion Engine Cooling Improved Through Wind Tunnel....May 180
Controlled Water Jacket Cooling Reduces Maintenance Costs....June 197
B. C. Thiel
Influence of Ozone on Diesel Engine Performance....June 204
Walter J. Armstrong and Clark E. Thorp
Ignition Accelerators for Compression-Ignition Engine Fuel July 272
J. S. Bogen and G. C. Wilson

Iso-Butane

Analysis of Butane-Isobutane Mixture....Feb. 67
Alfred W. Francis
Combustible Gases as Substitute for Motor Fuels....June 235
Gustav Egloff and Mary Alexander
Butane Dehydrogenation by the Houdry Process....Nov. 409
R. C. Lassiat and F. D. Parker

Page

Isomerization

Aviation Gasoline Plant Construction Will Be Completed In 1944 ..... Jan. 1
Liquid-Phase Isomerization ..... Feb. 61
Commercial Isomerization of Light Paraffins ..... Nov. 423
B. L. Evering, N. Fragen, and G. S. Weems

Isopentane

Commercial Isomerization of Light Paraffins ..... Nov. 423
B. L. Evering, N. Fragen, and G. S. Weems

Jacket Water Cooling

Controlled Water Jacket Cooling Reduces Maintenance Cost .. June 197
B. C. Thiel
Cooling-Water Systems and Their Chemical Treatment ..... Oct. 375
William A. Tanzola

Laboratory

The Electron Tube—Genie, Gremlin or Jeep? ..... Jan. 14
W. D. Cockrell
An Efficient Low-Holdup Laboratory Column ..... Feb. 63
John M. Bower, Jr., and Lloyd M. Cooke
Analysis of Butane-Isobutane Mixture ..... Feb. 67
Alfred W. Francis
Use of the Mass Spectrometer in the Routine Analysis of Refinery Gas Samples ..... April 123
J. G. Schaafsma

Laboratory Methods

Time-Saving Computing Instruments for Spectroscopic Analysis ..... Sept. 343
T. D. Morgan and F. W. Crawford
Role of the Laboratory in Refinery Efficiency ..... Dec. 485
John J. Stadtherr
Effect of the Diameter of Laboratory Columns With Fenske Packing on Their Efficiency and Capacity ..... Dec. 493
B. A. Kazanskii, A. L. Liberman and O. D. Sterligov
Viscosity of Propane-Oil Mixture ..... Dec. 481
R. W. Moulton and A. J. Mitchell, Jr.

Lead Susceptibility

Unisol Treatment Effects Large Savings for Big West Oil Company ..... June 218
F. C. Moriarty
Thiophenol in Cracked Gasoline ..... Feb. 83
G. S. Windle

Liquified Petroleum Gas

Progress of the Liquefied Petroleum Gas Industry in 1943 .... Jan. 124
G. G. Oberfell
Science in Natural Gas ..... Dec. 472
James E. Pew and Frank H. Dotterweich

Lubricants

Oil Dewaxed and Wax Deoiled in Simultaneous Operation .. June 230
Emil E. Ebner and F. T. Mertens
The Synthesis of Lubricants From the Fischer-Tropsch Process—Part 1 ..... July 260
F. Fischer and H. Koch
Recent Advances in Manufacture of Synthetic Lubricants From Kogasin ..... Aug. 312
F. Fischer, H. Koch, and K. Wiedeking
Sun Completes Aviation Lubricants Plant ..... Nov. 442
Detergency or Dispersancy in Heavy Duty Engine Oils ..... Dec. 504
Carl W. Georgi

Machine Shop

How We Reclaim Pump Rods by Metal Rebuilding ..... Feb. 69
Wm. J. Taylor
Pump Salvage Job ..... Dec. 497
J. Barrie Graham

Maintenance

Maintaining Required Clearances in Centrifugal Pumps ..... Jan. 39
Elton Sterrett
Compressed Air Institute Urges More Complete Use of Compressor Auxiliaries ..... Jan. 32
Maintaining Wartime Compressors at Peak Operating Capacity ..... Feb. 78
Bruno Thiel
Wooden Core in Storage Reel Protects Welding Cable .... Feb. 77
How We Reclaim Pump Rods by Metal Rebuilding ..... Feb. 69
Wm. J. Taylor
Refinery Operation Demands Effective Maintenance of Motor Starters ..... April 143
M. A. Hyde and L. E. Markle
Controlled Water Jacket Cooling Reduces Maintenance Costs ..... June 197
B. C. Thiel
Shortening Up on Down Time ..... Aug. 290
Maintenance of Electric Equipment Begins with Design ..... Aug. 292
Rayburn M. Hamilton
Three Hours of Training Improve Pump Efficiency at Bayway ..... Sept. 337
Processing of West Texas Sour Crudes ..... Oct. 388
L. R. Gray
Pump Salvage Job ..... Dec. 497
J. Barrie Graham

Mass Spectrometer

Use of the Mass Spectrometer in the Routine Analysis of Refinery Gas Samples ..... April 123
J. G. Schaafsma

Measurement

Characteristics of the Differential Type Flow Meter and Conditions Affecting Its Operation—Part 1 ..... Oct. 370
L. K. Spink
Characteristics of the Differential Type Flow Meter and Conditions Affecting Its Operation—Part 2 ..... Nov. 433
L. K. Spink
Characteristics of the Differential Type Flow Meter and Conditions Affecting Its Operation—Part 3 ..... Dec. 488
L. K. Spink

Page

Methane

Foreign Processes for the Conversion of Methane to Hyrdogen and Carbon Monoxide ..... Jan. 35
Heinz Heinemann
Combustible Gases as Substitute Motor Fuels ..... June 235
Gustav Egloff and Mary Alexander

Metal Application

How We Reclaim Pump Rods by Metal Rebuilding ..... Feb. 69
Wm. J. Taylor

Metallurgy

Applications of Nickel-Containing Corrosion-Resistant Alloys in the Petroleum Industry ..... May 186
B. B. Morton
Adapting Old Equipment to New Uses ..... Nov. 455
Donald E. Evans and Walter B. Meyer

Metering

An Improved Meter for the Measurement of Gas Flow Rates . March 115
W. G. Appleby and W. H. Avery
Characteristics of the Differential Type Flow Meter and Conditions Affecting Its Operation—Part 1 ..... Oct. 370
L. K. Spink
Characteristics of the Differential Type Flow Meter and Conditions Affecting Its Operation—Part 2 ..... Nov. 433
L. K. Spink
Characteristics of the Differential Flow Type Meter and Conditions Affecting Its Operation—Part 3 ..... Dec. 488
L. K. Spink

Motor Fuels

Estimated Consumption of Petroleum Products in the United States After the War ..... March 105
Study of the Effects of Catalytic Cracking on the Postwar Supply of Motor Gasoline, Distillates and Residual Fuels ..... March 111
Problems Confronting the Smaller Refineries ..... July 241
R. G. Atkinson

Motor Testing

Possibilities of Gasoline-Engine Development ..... Oct. 404
Forest S. Baster
Aircraft-Engine-Test Stand Completed at Bayway ..... Oct. 136

Natural Gasoline

Status of the Natural Gasoline Industry ..... May 132
J. E. Pew

Natural Gasoline Engineering and Design Developments

An Old Tower Goes to a New Job ..... Aug. 300
Engineering and Construction of the Santa Maria Valley Absorption Plant ..... Sept. 347
D. E. McFaddin

Natural Gas Processing

Synthesis of Gasoline From Carbon Monoxide and Hydrogen at Atmospheric Pressure ..... Feb. 70
Franz Fischer
Carbon Black—Part 1 ..... March 93
J. F. Gallie
Maximum Hydrocarbon Utilization With Natural Gas as a Chemical Raw Material ..... April 130
J. E. Pew and Frank H. Dotterweich
Economic Factors Affecting the Utilization of Natural Gas in the Southwest—Part 1 ..... April 126
Clinton C. Randall and R. L. Huntington
Carbon Black—Part 2 ..... April 149
J. F. Gallie
Natural Gas Will Supplement Crude Oil Reserves ..... May 145
Samuel F. Peterson
Economic Factors Involved in Moving Natural Gas From Southwest—Part 2 ..... May 122
C. L. Prokop and R. L. Huntington
Future Gas Supply Twice Known Reserves ..... June 130
Lyon F. Terry
Lease Booster Plant Collects Tank Vapors ..... Sept. 355
Fischer-Tropsch Synthesis and the Gas Industry ..... Nov. 415
V. I. Komarewsky and C. H. Riesz
High-Pressure Dehydration Unit Conforms to Refinery Piping Code ..... Nov. 430
Harold F. Dawe and Henry N. Wade
Science in Natural Gas ..... Dec. 472
James E. Pew and Frank H. Dotterweich

Neohexane

Commercial Isomerization of Light Paraffins ..... Nov. 423
B. L. Evering, N. Fragen, and G. S. Weems

Octane Rating

Thiophenol in Cracked Gasoline ..... Feb. 41
G. S. Windle

Patents

Invention and the Oil Industry ..... Oct. 144
Gustav Egloff

Personnel

How to Train Plant Personnel in Fire Prevention and Fire Fighting ..... May 159
A. W. Trusty
Three Hours of Training Improve Pump Efficiency at Bayway Sept. 337
How to Organize and Conduct a Refinery Fire School ..... Sept. 356
J. C. Watkins
Shell's Wood River Refinery Hangs Up New Safety Record .. Sept. 130
J. F. Goldsberry
Women Working ..... Oct. 130
Role of the Laboratory in Refinery Efficiency ..... Dec. 485
John J. Stadtherr
Chemical Engineering in the Petroleum Industry ..... Dec. 149
George Granger Brown

Page

Petro-Chemistry

Maximum Hydrocarbon Utilization With Natural Gas as a Chemical Raw Material....April 130
J. E. Pew and Frank H. Dotterweich
Chemicals From Petroleum....July 259
H. D. Wilde
Chemistry in Petroleum....Aug. 307
J. L. Franklin
Butane Dehydrogenation by the Houdry Process....Nov. 409
R. C. Lassiat and F. D. Parker
Fischer-Tropsch Synthesis and the Gas Industry....Nov. 415
V. I. Komarewsky and C. H. Riesz
Preparation of Drying Oils From Petroleum....Nov. 458
F. Christman
Science in Natural Gas....Dec. 472
James E. Pew and Frank H. Dotterweich
Textile Wetting and Foaming Agents From Petroleum....Dec. 502
E. Profft

Petroleum in War

Report on Lend-Lease Shows United States Biggest Oil User in War....Jan. 139
War Needs Spur Refineries on to All-Time High in 1943....Feb. 135
War Requirements Responsible for Refining Records....March 130

Plant Operation

Refinery Operation Demands Effective Maintenance of Motor Starters....April 143
M. A. Hyde and L. E. Markle
An Old Tower Goes to a New Job....Aug. 300
Gas Transmission Practice....Sept. 359
Loring E. Heckman
Lease Booster Plant Collects Tank Vapors....Sept. 355
Engineering and Construction of the Santa Maria Valley Absorption Plant....Sept. 347
D. E. McFaddin

Plastics

Styrene, Buna Rubber and Polystyrene....March 87
W. C. Goggin
Carbon Black—Part 1....March 93
J. F. Gallie
Science in Natural Gas....Dec. 472
James E. Pew and Frank H. Dotterweich

Polystyrene

Styrene, Buna Rubber and Polystyrene....March 87
W. C. Goggin

Polymerization

What Takes Place in Polymerization....July 253
Paul H. Faust
Problems Confronting the Smaller Refineries....July 241
R. G. Atkinson

Post-War

Study of the Effect of Catalytic Cracking on the Post-War Supply of Motor Gasoline, Distillates and Residual Fuels....March 111
Estimated Consumption of Petroleum Products in the United States After the War....March 105
How Will the New Processes Affect the Post-War Light-Ends Situation?....May 165
D. P. Barnard and J. H. Forrester
Problems Confronting the Smaller Refineries....July 241
R. G. Atkinson
Conversion of Thermal Cracking to the Cycloversion Process..Oct. 363
A. E. Buell and P. M. Waddill

Pressure Vessels

Test Pressure and Safe Dimensions of Welded Pressure Vessels....April 155
H. F. Lassner
Adapting Old Equipment to New Uses....Nov. 455
Donald E. Evans and Walter B. Meyer

Propane

Progress of the Liquefied Petroleum Gas Industry in 1943....Jan. 124
G. G. Oberfell
Pumping Light Hydrocarbons....April 117
Reuben G. Lovell
Combustible Gases as Substitute Motor Fuels....June 235
Gustav Egloff and Mary Alexander
Butane Dehydrogenation by the Houdry Process....Nov. 409
R. C. Lassiat and F. D. Parker

Pumping

Pumping Light Hydrocarbons....April 117
Reuben G. Lovell
Alkylation-Unit Pumping....Aug. 283
Irving Taylor
Viscosity of Propane-Oil Mixtures....Dec. 481
Laboratory Methods
R. W. Moulton and A. J. Mitchell, Jr.

Pumps

Maintaining Required Clearances in Centrifugal Pumps....Jan. 39
Elton Sterrett
How We Reclaim Pump Rods by Metal Rebuilding....Feb. 69
William J. Taylor
Three Hours of Training Improve Pump Efficiency at Bayway....Sept. 337
Pump Salvage Job....Dec. 497
J. Barrie Graham

Research

The Genesis of a Giant....Jan. 9
Robert P. Russell
War Requirements Responsible for Refining Records....March 130
Pan American Completes Aviation Gasoline Facilities....March 148
Invention and the Oil Industry....Oct. 144
Gustav Egloff

Page

The Future of Industrial Research as Seen by a Chemist....Nov. 137
Thomas Midgley, Jr.
New Developments in Petroleum Research....Dec. 144
J. K. Roberts
Chemical Engineering in the Petroleum Industry....Dec. 149
George Granger Brown

Safety

How to Train Plant Personnel in Fire Prevention and Fire Fighting....May 159
A. W. Trusty
What Constitutes a Hazardous Area....July 244
G. G. Griffin
Gaining Safety Through the Intensive Participation of the Employe....July 267
P. C. Shea
How to Organize and Conduct a Refinery Fire School....Sept. 356
J. C. Watkins
Shell's Wood River Refinery Hangs Up New Safety Record..Sept. 130
J. F. Goldsberry
Processing of West Texas Sour Crudes....Oct. 388
L. R. Gray
How Foam Conquers Fire....Oct. 395
F. S. Mabbatt
How Carbon Dioxide Conquers Fire....Nov. 447
H. V. Williamson
Safety With Hydrofluoric Acid Alkylation....Dec. 469
A. W. Trusty

Scale Removal

Chemical Removal of Scale From Condenser Tubes....Dec. 477
J. S. Rush and W. S. Jennings

Solvent Refining

Oil Dewaxed and Wax Deoiled in Simultaneous Operations...June 230
Emil E. Ebner and F. T. Mertens

Sour Crude

Processing of West Texas Sour Crudes....Oct. 388
L. R. Gray

Spectrophotometry

Time-Saving Computing Instruments for Spectroscopic Analysis....Sept. 343
T. D. Morgan and F. W. Crawford

Stabilization

Pressure Distillate Stabilizer and Butane Recovery Unit Come Out of Junk Heap....Jan. 37
Improvised Tower Recovers Butane....Feb. 55

Styrene

Styrene, Buna Rubber, and Polystyrene....March 87
W. C. Goggin
West Coast Synthetic Rubber Industry Unveiled....May 192

Substitute Fuels

Combustile Gases as Substitute Motor Fuels....June 235
Gustav Egloff and Mary Alexander

Sulphur

Thiophenol in Cracked Gasoline....Feb. 41
G. S. Windle
Processing of West Texas Sour Crudes....Oct. 388
L. R. Gray

Sulphur Removal

Unisol Treatment Effects Large Savings for Big West Oil Company....June 218
F. C. Moriarty

Spectrometry

Time-Saving Computing Instruments for Spectroscopic Analysis....Sept. 343
T. D. Morgan and F. W. Crawford

Synthesis

Foreign Processes for the Conversion of Methane to Hyrdogen and Carbon Monoxide....Jan. 35
Heinz Heinemann
Synthesis of Gasoline From Carbon Monoxide and Hydrogen at Atmospheric Pressure....Feb. 70
Franz Fischer
Operation of Synthetic Toluene Plant Made Public....April 128
Maximum Hydrocarbon Utilization With Natural Gas as a Chemical Raw Material....April 130
J. E. Pew and Frank H. Dotterweich
The Synthesis of Lubricants From the Fischer-Tropsch Process—Part 1....July 260
F. Fischer and H. Koch
Coal as an Auxiliary Source of Gasoline Supply....Aug. 138
Horace C. Porter

Synthetic Rubber

Competitive Forces to Govern Petroleum or Alcohol Use in Synthetic Rubber Production....March 139
War Requirements Responsible for Refining Records....March 130
Army Tests Show Synthetic Tires Good . . . and Improving....March 126
Rubber Program Reaches Controversy and Confusion Stage....March 122
Port Neches Butadiene Plant Now on Stream....March 83
Styrene, Buna Rubber and Polystyrene....March 87
W. C. Goggin
Status of Petroleum Contribution to the Synthetic Rubber Program....April 130
West Coast Synthetic Rubber Industry Unveiled....May 192
E Pluribus Unum....June 226
Chemicals From Petroleum....July 259
H. D. Wilde
Chemistry in Petroleum....Aug. 307
J. L. Franklin
Rubber Director Closes Office With Building Program Complete....Aug. 126

Page

Taxation
Co-operative Movement Hits Petroleum Industry.....July 154

Testing
Test Pressure and Safe Dimensions of Welded Pressure Vessels .....April 135
H. F. Lassner

Tetra Ethyl Lead Response
Thiophenol in Cracked Gasoline.....Feb. 41
G. S. Windle

Thermal Black
Carbon Black—Part 1.....March 93
J. F. Gallie

Thermal Cracking
Shortening Up on Down Time.....Aug. 290
Processing of West Texas Sour Crudes.....Oct. 388
L. R. Gray

Thermal Reforming
Conversion of Thermal Cracking to the Cycloversion Process..Oct. 363
A. E. Buell and P. M. Waddill

Thiophenol
Thiophenol in Cracked Gasoline.....Feb. 41
G. S. Windle

Toluene
War Requirements Responsible for Refining Records.....March 130
Operation of Synthetic Toluene Plant Made Public.....April 128
Chemistry in Petroleum.....Aug. 307
J. L. Franklin

Topping Plant
Processing of West Texas Sour Crudes.....Oct. 388
L. R. Gray

Tower Design
Process Design Procedure for Multicomponent Fractionators.Sept. 321
C. G. Kirkbride

Towers
Design of Foundations for Elevated Towers.....Feb. 46
Samuel Garnett

Treating—Chemical
Thiophenol in Cracked Gasoline.....Feb. 41
G. S. Windle
Unisol Treatment Effects Saving for Big West Oil Company..June 218
F. C. Moriarty

Treating—Water
Boiler Feed Water Chemistry.....Aug. 311
Cooling-Water Systems and Their Chemical Treatment.....Oct. 375
William A. Tanzola

Page

Tube Cleaning
Shortening Up on Down Time.....Aug. 290

Vaporization
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 1.....Feb. 44
R. L. Huntington
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 2.....March 107
R. L. Huntington
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 3.....April 139
R. L. Huntington
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 4.....May 181
R. L. Huntington
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 5.....June 223
R. L. Huntington
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 6.....July 269
R. L. Huntington
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 7.....Aug. 301
R. L. Huntington
Process Design Procedure for Multicomponent Fractionators.Sept. 321
C. G. Kirkbride
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 8.....Sept. 351
R. L. Huntington
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 9.....Oct. 400
R. L. Huntington
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 10.....Nov. 451
R. L. Huntington
Application of Unit Operations to Fractionation and Other Vaporization Processes—Part 11.....Dec. 499
R. L. Huntington

Vessels
Design of Foundations for Elevated Towers.....Feb. 46
Samuel Garnett
The Design of Ring Girders for Horizontal Tanks.....June 207
A. C. Barton

Water Systems
Cooling-Water Systems and Their Chemical Treatment.....Oct. 375
William A. Tanzola
Maintaining Wartime Compressors at Peak Operating Capacity .....Feb. 73
Bruno Thiel

Welding
Wooden Core in Storage Reel Protects Welding Cable.....Feb. 77
Adapting Old Equipment to New Uses.....Nov. 455
Donald E. Evans and Walter B. Meyer

Monthly Editorial Features

Page

Advertisers' Index
January 222
February 246
March 254
April 262
May 254
June 270
July 254
August 270
September 254
October 302
November 286
December 286

Business Notes
January 211
February 230
March 238
April 252
May 244
June 256
July 244
August 262
September 242
October 286
November 274
December 276

Catalog and Bulletins
January 219
February 243
March 251
April 261
May 253
June 269
July 251
August 267
September 251
October 299
November 283
December 285

Digest of U. S. Patents
Heinz Heinemann
On Catalytic Hydrogenation of Hydrocarbons.....Jan. 154
On Polymerization .....Feb. 142
On Dehydrogenation and Dehydrohalogenation of Hydrocarbons .....April 142

Page

On Alkylation of Hydrocarbons .....May 164
On Desulfurization .....June 156
Recovery and Processing of Natural Gas and Its Constituents and on Hydrocarbon Synthesis.....July 172
On Isomerization .....Aug. 154
On Catalytic Aromatization and Cyclization.....Oct. 178
On Hydrogenation and Halogenation .....Nov. 183

The Look Box
January 81
February 81
March 81
April 81
May 81
June 81
July 83
August 83
September 83
October 79
November 81
December 77

New Equipment
January 202
February 218
March 226
April 242
May 236
June 250
July 236
August 256
September 236
October 278
November 270
December 270

Science and Technology by E. S. Leslie and H. B. Coates
January 166
February 160
March 168
April 164
May 176
June 171
July 186
August 172
September 174
October 186
November 196
December 194

Page
164
154
173
154
173
183
81
81
81
81
81
83
83
83
79
81
77
202
218
226
242
236
250
236
256
236
278
270
270
166
150
168
164
176
171
186
172
174
186
196
194
12